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(54) Tamper-indicating cap

(57) A plastics tamper-indicating bottle cap is fashioned in two parts (1, 2). The first part (1) is fitted direct to the neck of a bottle (40) and exhibits outward-facing projections (5) which, when the bottle is opened by unscrewing the second part (2), will make contact with and ultimately break a number of slender webs (6) which unite a band (4) with the second part. In a further embodiment, the first part (1) merely consists of a cylindrical collar carrying the projections (5), and a disc, which disc is forced up into the second part (2) on assembly of the cap to the bottle to form a seal.

Fig.1

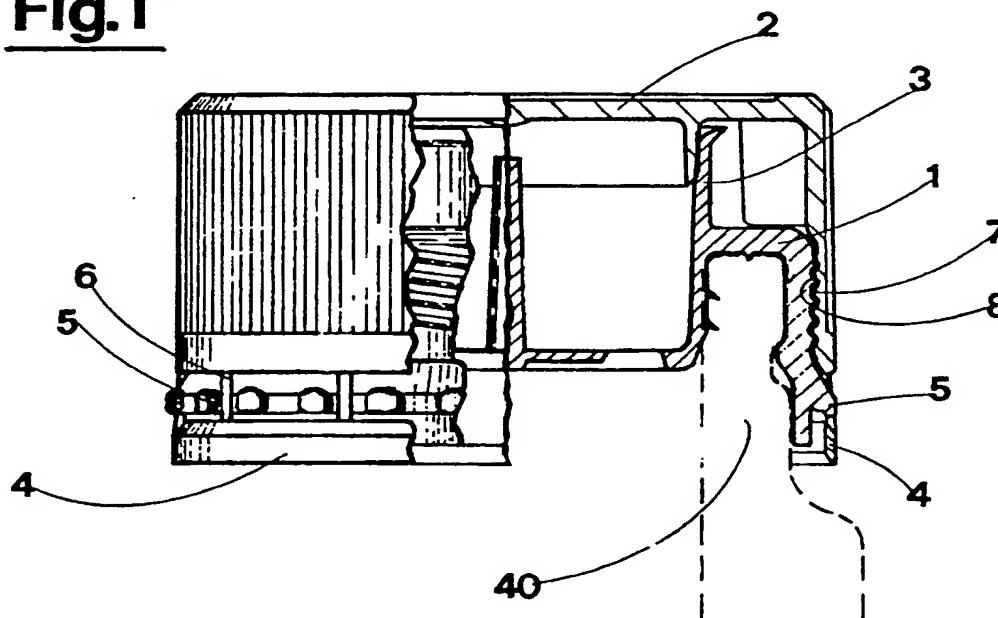


Fig.1

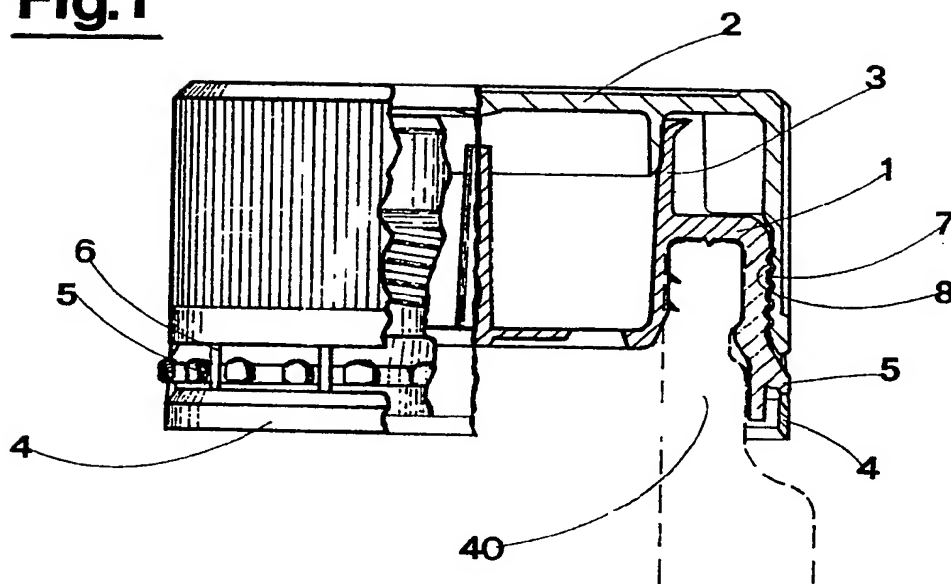


Fig.2

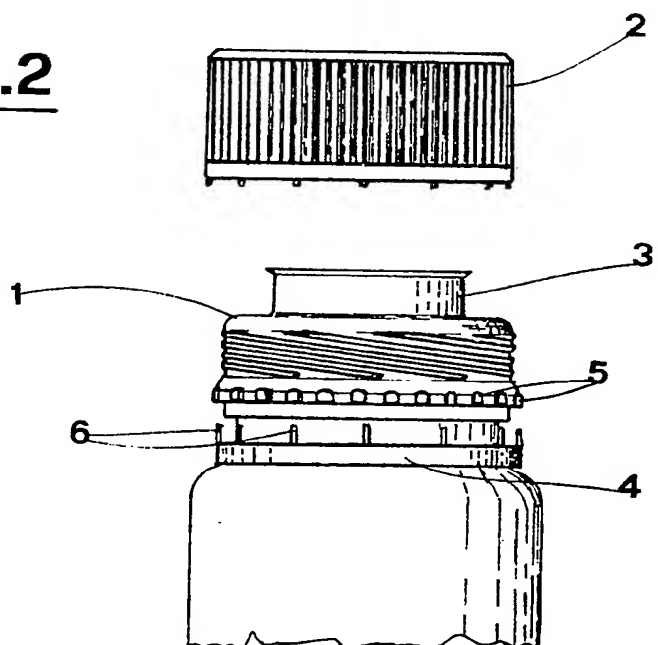
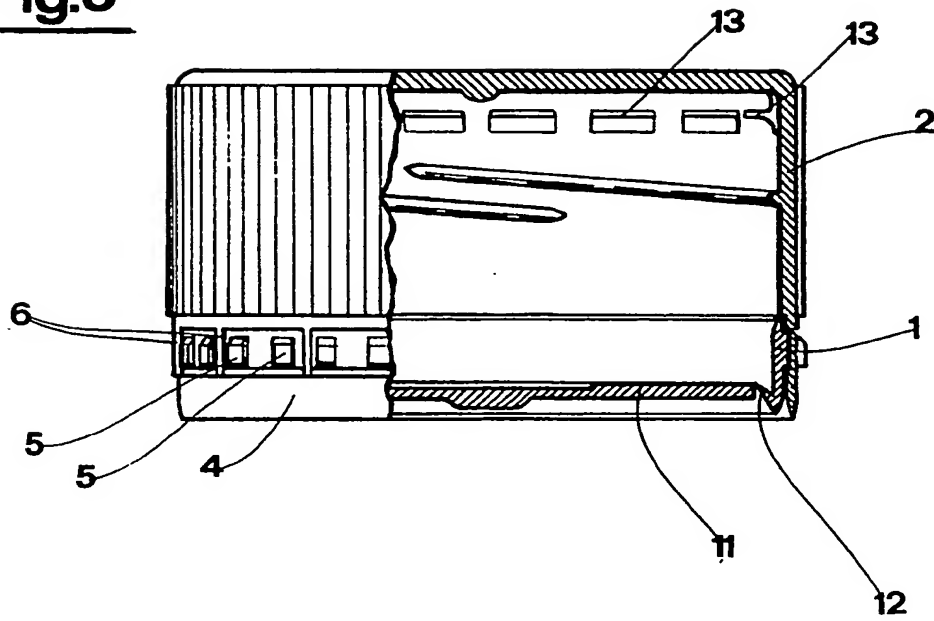
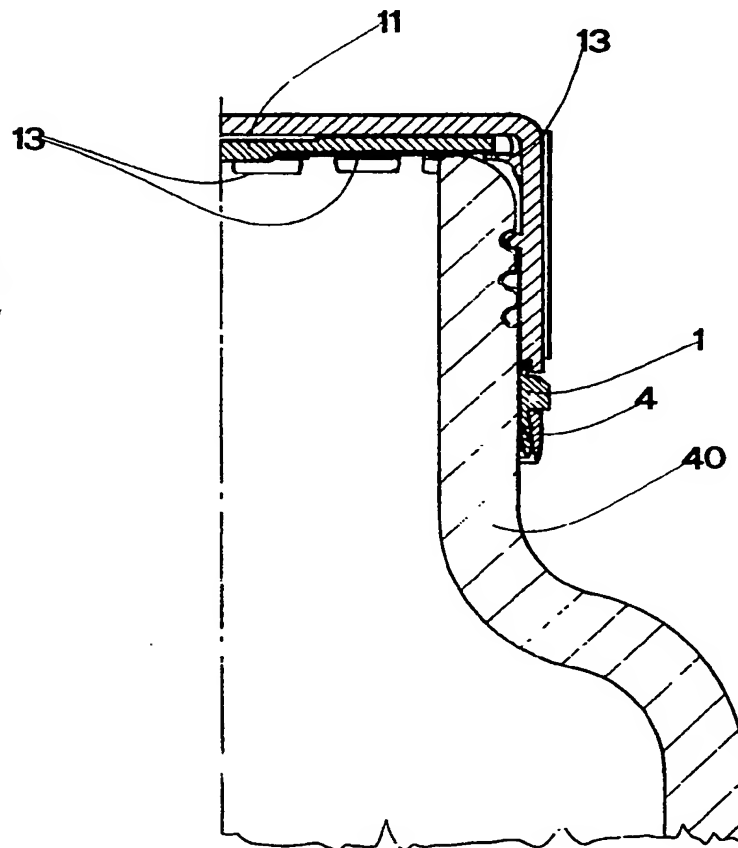


Fig.3**Fig.4**

SPECIFICATION

Plastic cap in two parts incorporating a breakable seal, for bottles in particular

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The invention described herein relates to a plastic cap fashioned in two parts and incorporating a breakable seal, for bottles in particular.

10 The object of the invention is that of providing a bottle cap simple and inexpensive to manufacture, which can be fashioned by moulding with no requirement for further machining of a mechanical nature, and which can be fitted to bottles at high speed by automatic machinery.

15 A further object is that of providing a cap which ensures the bottle's remaining unopened: that is to say, embodied such as to advertise clearly when the bottle is opened ultimately for the first time.

20 These and other objects are realised by the plastic cap disclosed, which is of a basic type fashioned in two parts with a breakable seal, cylindrical in shape, having a first part which fits over the neck of a bottle and a second part which pairs with the first part and incorporates the breakable seal, and is characterised in that the breakable seal consists of a collar united with the bottom edge of the second part by way of easily-broken webs inserted between a number of projections which issue from the outward-facing external cylindrical surface of the first part of the cap in such a way as to inhibit rotational and linear movement of the breakable seal relative to the first part of the cap.

35 Two embodiments of the invention will now be described by way of example, with the aid of the two accompanying sheets of drawings, in which:

40 *Figure 1* is the cutaway, in vertical elevation, of a first embodiment of the cap seen fitted to the neck of a bottle;

45 *Figure 2* shows the cap of *Fig. 1*, fitted to the neck of a bottle, after being broken open;

Figure 3 is the cutaway of a second embodiment of the cap, seen in vertical elevation;

50 *Figure 4* shows the cap of *Fig. 3* fitted to the neck of a bottle.

The cap to which the invention relates is fashioned in two parts from moulded plastic, and most commonly utilised for bottled cooking and salad oils, though its application, clearly, is not thus circumscribed. The overall cylindrical shape of such a cap makes for extreme simplicity of handling by automatic machinery utilised in fitting caps of the type to the necks of bottles.

60 In a first embodiment of the cap, the first part 1 is provided with a pourer 3 and is fitted to the neck of a bottle 40 in the manner of a sheath: that is, this same first part 1 is embodied with an annular recess into which the uppermost lip of the bottle inserts. The lip

can be shaped in a variety of ways, and may be provided with projections inhibiting rotation of this first part 1 of the cap relative to the bottle neck. The cylindrical surface of the first part of the cap which lies externally of the bottle and faces outward once the cap is fitted thereto, exhibits a number of projections 5 spaced regularly apart in a ring around the periphery of the cap.

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75 The second part 2 of the cap is a bottle-top proper, and is offered to the first part and tightened so as to close the bottle. A hermetic seal may be provided by a medium located internally of the second part 2 of the cap, or alternatively, by a projection issuing from the second part 2 which locates internally of the pourer 3, as in *Fig. 1*. The lower extremity of the cap incorporates a breakable seal which takes the form of a collar 4 united with the bottom edge of the second part 2 of the cap by easily-broken webs 6.

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The length of these webs is considerably greater than their thickness, for reasons which will duly become clear; suffice it to say that the length and the number of the webs are such as to provide a distinct separation between the collar 5 and the remainder of the second part 2 of the cap.

90 Parts 1 and 2 of the cap are moulded separately, and assembled thereafter by fitting of part 2 over part 1 in such a way that the webs 6 of the second part 2 locate between the projections 5 offered by the first part 1, thereby inhibiting rotation of the collar 4 relative to said first part 1. The assembled cap is then pressed onto the neck of the bottle by automatic machinery.

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The first part and second part of the cap are screw-coupled by way of a male thread located on the first part 1 and a female thread incorporated into the second part 2. This threaded coupling comes into play however, only after the cap has been pressed onto the bottle, since initial assembly of the cap is accomplished by deforming the first part 1 so as to enable its direct insertion into the second part 1.

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In the event of the pourer being unnecessary or unwanted, the first part 1 of the cap may be provided simply with a disc 11 associating coaxially with said first part 1 by way of radial perforations 12, as in the second embodiment illustrated in *Fig. 3*.

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In this embodiment, the second part 2 of the cap is provided uppermost with an annular groove 13, and the cap pairs with the bottle neck by way of a threaded coupling. Whilst the female thread is incorporated into the second part 2 of the cap as in the first embodiment, the male thread in this instance is located on the bottle neck.

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Driving the cap onto the neck of the bottle for the first time, the perforations 12 will break, and the disc 11, thrust upward by the bottle neck, will lock ultimately into the annu-

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lar groove 13. In this way, the disc 11 remains united with the second part 2 of the cap and acts as a seal.

Once fitted to the neck of a bottle, any
5 rotation of the second part 2 of the cap in an attempt to open the bottle will bring the webs 6 and projections 5 into direct contact whereupon, forcing such rotation further, the webs 6 will be broken. Thus, the bottle cannot be
10 opened without breaking the webs, and by definition, without advertising the fact that the bottle has been opened.

Once the webs 6 are broken, the collar 5 separates completely from the second part 2
15 of the cap, and will be seen clearly to be thus separated even when screwing the second part 2 back onto the first part 1 or onto the bottle neck, by virtue of the long and slender embodiment of the webs which, once broken,
20 ensure that no attempt to re-unite the collar 5 with the remainder of the second part 2 of the cap can remain undetected.

CLAIMS

25 1. A plastic cap in two parts incorporating a breakable seal, for bottles in particular, which is of a basic type cylindrical in shape, having a first part (1) which fits over the neck of a bottle (40) and a second part (2) which
30 pairs with the first part and incorporates the breakable seal, and is characterised in that the breakable seal consists of a collar (4) united with the bottom edge of the second part by way of easily-broken webs (6) inserted be-
35 tween a number of projections (5) which issue from the outward-facing external cylindrical surface of the first part of the cap in such a way as to inhibit rotational and linear move-
40 ment of the breakable seal relative to the first part of the cap.

2. Cap as in claim 1 wherein the length of the single web (6) is considerably greater than its thickness.

3. Cap as in claim 1 wherein the first part
45 (1) is provided with a pourer (3) and is pressed onto the neck of a bottle so as to ensheath the uppermost lip thereof; and wherein the first and second parts of the cap are screw-coupled by way of a male thread
50 located on the first part engaging a female thread incorporated into the second part.

4. Cap as in claim 1 wherein a disc (11), associated coaxially with the first part (1) by way of radial perforations (12), is separated
55 therefrom by breakage of the perforations when the cap is driven onto the bottle, and urged upward so as to lock in an annular groove (13) located internally and uppermost of the second part (2); and wherein the cap
60 and the neck of the bottle are screw-coupled by way of a male thread located on the neck of the bottle engaging a female thread incorporated into the second part of the cap.

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